

Enclosure 1

HISTORICAL DATA

FOR

NASA Sounding Rocket Operations Contract III

November 2013

Table 1. NASA Sounding Rocket Program Historical Mission Data

			Launch Rate			Success Rate		Mission Complexity Level						Launch Site							
	<i>Fiscal Year</i>	<i>Missions in Progress</i>	<i>Number of Launches</i>	<i>Number of Core</i>	<i>Number of Reimbursable</i>	<i>Number of Failures</i>	<i>Success Rate</i>	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>	<i>Other</i>	<i>WSMR</i>	<i>WFF</i>	<i>PFRR</i>	<i>ARR</i>	<i>KWAJ</i>	<i>SWEDEN</i>	<i>HAWAII</i>	<i>SVAL</i>	<i>SNI</i>
NSROC I	<i>FY99</i>	46	23	23	0	1	96	4	10	5	4	0	11	4	4	3	0	1	0	0	0
	<i>FY00</i>	52	16	16	0	3	81	1	10	4	1	0	7	6	3	0	0	0	0	0	0
	<i>FY01</i>	56	12	12	0	0	100	2	6	2	1	1	5	6	0	0	0	0	1	0	0
	<i>FY02</i>	72	27	25	2	0	100	10	13	3	1	0	8	4	11	2	0	0	2	0	0
	<i>FY03</i>	56	27	23	4	3	89	10	5	11	1	0	6	11	7	0	0	2	0	1	0
	<i>FY04</i>	43	26	26	0	6	77	4	12	9	1	0	7	4	0	1	14	0	0	0	0
	<i>FY05</i>	52	19	11	8	3	84	1	17	0	1	0	8	4	3	0	0	0	4	0	0
	<i>FY06</i>	58	22	8	14	0	100	3	14	5	0	0	17	3	0	1	0	0	1	0	0
	<i>FY07</i>	47	18	18	0	3	83	2	6	7	3	0	5	1	10	2	0	0	0	0	0
	<i>FY08</i>	50	13	12	1	0	100	2	4	5	0	2	4	6	0	3	0	0	0	0	0
	<i>FY09</i>	55	17	13	4	0	100	3	3	9	2	0	4	4	8	0	0	0	0	0	1
	<i>FY10</i>	52	18	13	5	0	100	8	5	4	1	0	8	4	2	0	0	0	0	0	4
NSROC II	<i>FY11</i>	55	13	12	1	2	85	4	2	4	1	2	2	6	3	1	0	0	0	0	1
	<i>FY12</i>	53	21	20	1	1	95	4	6	8	2	1	8	10	1	2	0	0	0	0	0
	<i>FY13</i>	49	19	17	2	0	100	6	1	11	1	0	8	6	1	0	4	0	0	0	0
Historical Averages	<i>Avg - 15 yr</i>	53	19.4	16.6	2.8	1.5	92.7	4.3	7.6	5.8	1.3	0.4	7.2	5.3	3.5	1.0	1.2	0.2	0.5	0.1	0.4
	<i>Avg - 10 yr</i>	51	18.6	15.0	3.6	1.5	92.4	3.7	7.0	6.2	1.2	0.5	7.1	4.8	2.8	1.0	1.8	0.0	0.5	0.0	0.6
	<i>Avg - 5 yr</i>	53	17.6	15.0	2.6	0.6	96.0	5.0	3.4	7.2	1.4	0.6	6.0	6.0	3.0	0.6	0.8	0.0	0.0	0.0	1.2

Table 2. Historical Data for DRPA Projects - Recurring

Core Category	Project Name	Category	Project Scope	FY11	FY12	FY13	FY14
Administrative	Commercial Rocket Motor Procurement	B	Provide commercial sustainer motors for applicable Sounding Rocket Missions. This includes the responsibility of procuring, monitoring progress and technical performance, and accepting the motors. Scope to include hardware costs for concurrent qualification/production effort of motors.	X	X	X	X
Administrative	Parachute Procurement	C	Maintain an adequate inventory of parachute systems for recovery of sounding rocket payloads. NSROC shall assess parachute inventory levels and conduct procurement activities as necessary to maintain adequate quantities of each parachute type to support current sounding rocket mission requirements for the current fiscal year.		X	X	X
Administrative	Recovery System Refurbishment	D	NSROC shall assess the number of recovery systems in stock and refurbish enough of them to conduct the mission manifest for the fiscal year. Procurement buyer, receipt, stock room labor, engineering labor, acceptance testing labor - if needed, and fabrication labor for these units shall be included. This effort can be accomplished through procurement or by bringing the refurbishment effort in house at NSROC if it will improve cost or schedule performance.	X	X	X	X
Administrative	Boost Guidance System (BGS) Refurbishment	D	NSROC shall assess the inventory and mission manifest and provide Boost Guidance System (BGS) refurbishment, Pre-Flight Analysis, and other BGS related support needed to support Sounding Rocket Missions thru the current fiscal year. Refurbishment shall include successful accomplishment of the Acceptance Testing for each unit and placing the systems into inventory, ready to support missions.	X	X	X	X
Administrative	Stock Inventory	D	NSROC shall assess the amount of inventory in stock and the material needs for the upcoming year. NSROC shall procure, receive & test as applicable, and enter into stock all COTS materials needed to stock the stockroom for the next contract year. Common stock items such as battery boxes that are fabricated in the NSROC mechanical and electrical shops shall be included. Examples include the fabrication of connector brackets, battery boxes, etc. or the acquisition of raw materials and components utilized within payload support subsystems. Include procurement buyer, receipt, and stock room, engineering, fabrication, and acceptance testing labor for both purchased and made in-house items on this project. Due to the dynamic SRPO budget, this SOW and the metrics may be revised.	X	X	X	X
Administrative	Vehicle Hardware Inventory	C	NSROC shall determine and furnish an adequate amount of fin sets and associated vehicle hardware for the fiscal year. Hardware to include fins, staging hardware, nosecones, launch lugs, manacle bands, deployment hardware, and other miscellaneous vehicle hardware.	X	X	X	X
Administrative	Office Supplies and Shop Consumables	D	The NSROC II Contractor shall procure office supplies and shop consumables consistent with the programmatic needs for the stated POP. This includes tooling in the shop, gasses, nitrogen, coolants, lubricants, chemicals, cleaners, lifting hardware, safety items, batteries, tape, oils, garnet, and other smaller items used on a recurring basis.	X	X	X	X

Management	Outreach	B	This project is for the design, development, and implementation of an Outreach Program that will provide educational development activities directed at advancing interest in Science, Technology, Engineering, and Math career paths for students in grades K through 12. This Program shall be implemented within the local community generally within commuting distance of Wallops Flight Facility, although exceptions involving organizations from more distant locations may be considered, but will require preapproval from the Sounding Rockets Program Office. Interns from the Intern Program should be involved in these developmental activities as they can more readily relate to the younger students and serve as role models. Their involvement in these activities will also provide them with a personal developmental experience of their own. The contractor may also be requested to support/participate in additional outreach activities developed independently by the Sounding Rockets Program Office or other NASA entities.	X	X	X	X
Management	Internship Program	B	Implement a university undergraduate/graduate level student outreach intern/co-op program for the Sounding Rockets Program Office. The program shall provide for approximately three to four Full Time Equivalent (FTE) positions for each contract year. This target FTE rate need not be maintained consistently throughout the academic year, but should be proportioned between academic semesters and vacation periods to the maximum advantage of the program. The maximum number of FTEs during a month shall not exceed 6. The principal goal of the program shall be to provide a meaningful and relevant work experience for the intern/co-op participants who will provide a readily available pool of experienced recent graduates who may be considered for permanent full time employment in support of the Sounding Rockets Program and other Wallops activities. This will require work assignments (and appropriate mentoring and oversight) supporting actual missions and other projects as routinely assigned to the NSROC Contractor. While the program should principally focus on the career development of candidates involved in engineering, math, and scientific disciplines; it need not necessarily be restricted to those disciplines as there may be needs within the Sounding Rockets Program and Wallops community within other areas such as management, business, etc.	X	X	X	X
Technical	ACS Gyro Fabrication and Maintenance	B	NSROC shall assess the number of attitude control system (ACS) gyros and fabricate a sufficient quantity to meet the requirements of the mission manifest (including reimbursable requirements) for the current fiscal year. Each gyro shall be fully functional, tested, and flight ready.	X	X	X	X
Technical	Attitude Control System (ACS) Inventory	B	NSROC shall maintain an adequate inventory of attitude control systems (ACS) for core sounding rocket payloads. NSROC shall assess ACS inventory levels and conduct fabrication and procurement activities as necessary to maintain adequate quantities of each ACS type to support current core sounding rocket mission requirements for the current fiscal year. Work Orders will be issued for each individual system (for both core and reimbursable missions).	X	X	X	X
Technical	Anomaly Investigation Board (AIB) Support	D	This project is for NSROC support in the area of investigating mission failures. The scope of this project covers support by NSROC employees directly assigned to Anomaly Investigation Boards (AIB), as well as any NSROC employees that are requested to provide analyses, testing, or other support to the AIB that is over-and-above what is already required during normal post-flight/mission close-out activities. Work orders will be issued for each mission AIB.	X	X		

Technical	Research and Development	D	NSROC shall research and develop strategies and provide implementation plans to improve Sounding Rocket systems and support systems to include new or improved: vehicle stacks\configurations; mechanical systems; telemetry systems; power systems; command uplink systems; recovery systems; GSE for any subsystems; functional capabilities (including but not limited to TM ground stations, machine shop, ACS, environmental, etc). This includes engineering and technician support for conceptual studies to arrive at a white paper proposal.	X	X	X	X
Technical	General Sounding Rocket Program Office Support	D	This Project is for NSROC support to the Sounding Rockets Program Office. Various types of work orders (WOs) may be issued to include: - Drafting - Test & Integration - Design - Materials - Analysis - Fabrication - Machine or electrical shop operations	X	X	X	X
Technical	Ground Support Equipment (GSE)	C	NSROC shall procure, repair, and modify GSE required for the mechanical, electrical and general equipment to provide support for NSROC II operations. This also covers additional GSE (power supplies, etc.) to maintain the program capabilities. These GSE included in this class of equipment are not specific to the actual mission GSE but provide for GSE that supports a wider range of mission and projects support. This project also encompasses the required GSE upkeep, outside the routine maintenance of machine shop equipment and ground stations, and NSROC provided software licenses and support.	X	X	X	
Technical	PFRR Launch Control	B	This project is for NSROC to provide the launch control console operator at PFRR for the current fiscal year. The project will include the checkout of the launcher firing circuits, operate the launcher controls, and firing panels before and during launch operations at Poker Flats.	X	X		
Technical	Ordnance Inventory	C	NSROC shall assess the ordnance inventory and mission manifest and provide all ordnance items needed to support Sounding Rocket missions. Ordnance shall be entered into the NSROC stock system and ready to be issued out to support the missions when required. Procurement buyer, receipt, stock room, engineering, and acceptance testing labor to fulfill this project shall be included. Work orders (WOs) will be written each FY for that year's needs.		X	X	X
Technical	Propulsion Support	D	This Project is for ongoing consultant technical support to the NASA Sounding Rocket Program relating to propulsion systems, diagnostic support, and review of anomalous performance. Support may include subject matter expert teleconferences and evaluations on propellant/formulations, pyrotechnic systems, igniters and other energetic systems. It is not expected that more than 10 hrs/month will be required to support activities during normal times.	X	X		
Technical	WFF Aircraft Office Support	D	Aircraft work orders to be issued under this project include: - Drafting - Design - Fabrication - Machine or Electrical shop operations - Test & Integration - Materials	X	X	X	

			- Mechanical/electrical technician support				
Technical	WFF Balloon Program Office Support	D	<p>The purpose of this project is to support the Balloon Program Office. Work orders to be issued under this project include:</p> <ul style="list-style-type: none"> - Drafting - Analysis - Design - Fabrication - Machine or electrical shop operations - Test & Integration - Materials - Training 	X	X	X	X
Technical	WFF Range and Mission Management Office Support	D	<p>Provide mechanical and electrical technical support to Code 840/Range and Mission Management Office. Support shall include work orders for the refurbishment, installation, unscheduled maintenance, and configuration of Wallops Island Launch Range facilities and equipment. This includes but is not limited to: rocket launchers, payload and rocket motor handling equipment, fixed and portable shelters, environmental control equipment, and launcher and rocket motor firing control equipment and interfacing cabling. Additional support may include: performing the functions of Pad Manager; performing launch vehicle inspection, testing, assembly, buildup, and staging operations; performing mechanical and electrical fabrication support; engineering design and drafting support; engineering analysis support; storm\emergency preparations; providing logistics support associated with various launch range activities; providing training; machine or electrical shop operations, test & Integration, mechanical or electrical technician support, and ordering\ furnishing materials.</p>	X	X	X	X
Technical	WFF AETD Code 569 Support	D	<p>Code 569 work orders to be issued under this project include:</p> <ul style="list-style-type: none"> - Fabrication - Materials - Mechanical/Electrical Technician Support - Environmental Test Support 	X	X		

Table 3. Historical Data for DRPA Projects – Non-Recurring
TBD